

Listing of Claims:

Claim 1. (Currently amended): An apparatus for control of an alternating current appliance, said apparatus being entirely resident within either an appliance plug or a plug-in module, said plug or plug-in module comprising power delivery conductors, and said apparatus comprising a programmable controller which is programmable exclusively through a plurality of the power delivery conductors.

Claims 2-26. (Canceled).

Claim 27. (Previously Presented): The apparatus of claim 1 wherein said plurality numbers no more than four.

Claim 28. (Previously Presented): The apparatus of claim 27 wherein two of said no more than four are electrically shorted together such that said plurality of power delivery conductors consists of not more than three electrically unique power delivery conductors.

Claim 29. (Previously Presented): The apparatus of claim 28 wherein a programming signal is applied to two of said not more than three electrically unique power delivery conductors.

Claim 30. (Previously Presented): The apparatus of claim 29 wherein said programming signal comprises a series of pulses.

Claim 31. (Previously Presented): The apparatus of claim 28 wherein a data line and a clock line of said controller are controlled by application of a programming signal applied to two of said not more than three electrically unique power delivery conductors.

Claim 32. (Previously Presented): The apparatus of claim 28 wherein a mixture of direct and alternating current signals is applied to two of said not more than three electrically unique power delivery conductors.

Claim 33. (Previously Presented): The apparatus of claim 32 wherein said mixture of direct and alternating current signals places said programmable controller into a programming mode.

Claim 34. (Previously Presented): The apparatus of claim 33 wherein at least one of said signals comprises a high frequency signal.

Claim 35. (Previously Presented): The apparatus of claim 1 wherein said programmable controller is electronically configured to implement a set of control actions.

Claim 36. (Previously Presented): The apparatus of claim 1 wherein said programmable controller comprises a microcontroller.

Claim 37. (Previously Presented): The apparatus of claim 1 wherein said controller controls an element selected from the group consisting of thyristors, transistors, triacs, and combinations thereof.

Claim 38. (Previously Presented): The apparatus of claim 1 wherein said programmable controller is programmed via electronic signals from a programmer.

Claim 39. (Currently Amended): The apparatus of claim 1 wherein the controller is programmable after said apparatus is assembled and the controller of the apparatus is entirely resident within said appliance plug or a plug-in module.

Claim 40. (Previously Presented): The apparatus of claim 1 wherein said apparatus enables an appliance electrically connected thereto to operate in a manner different from that originally intended.

Claim 41. (Canceled).

Claim 42. (Currently Amended): A method for control of an alternating current appliance, the method comprising the steps of:

- providing a programmable controller;
- providing an appliance plug ~~or a plug-in module~~;
- disposing the programmable controller within the appliance plug ~~or plug-in module~~;
- providing a plurality of electrical power delivery conductors;
- programming the controller exclusively by applying one or more signals to two or more of the power delivery conductors.

Claim 43. (Previously Presented): The method of claim 42 wherein the programming step comprises applying one or more signals to no more than three of the power delivery conductors.

Claim 44. (Currently Amended): The method of claim 42 additionally comprising programming the programmable controller with electronic signals communicated from a programmer to the controller through one or more of the power delivery conductors after the controller has been disposed in the appliance plug ~~or plug-in module~~.

Claim 45. (Previously Presented): The method of claim 42 additionally comprising the step of applying a high frequency signal to two of the power delivery conductors to place the programmable controller into a programming mode.

Claim 46. (Previously Presented): The method of claim 44 additionally comprising the step of applying a series of pulses applied to two of the power delivery conductors to control both data and clock lines during programming.

Claim 47. (Original): The method of claim 44 additionally comprising applying a mixture of direct current and alternating current signals to two of the power delivery conductors to place the programmable controller into a programming mode.

Claim 48. (Previously Presented): The method of claim 42 additionally comprising the step of electronically configuring the programmable controller to implement a set of control actions.

Claim 49. (Previously Presented): The method of claim 48 wherein the step of providing a programmable controller comprises providing a microcontroller.

Claim 50. (Previously Presented): The method of claim 42 further comprising the step of providing an element selected from the group consisting of thyristors, transistors, triacs, and combinations thereof.

Claim 51. (Previously Presented): The method of claim 42 additionally comprising the step of controlling an appliance by programming the programmable controller so as to enable the appliance to perform in a manner different from its original design.

Claim 52. (Previously Presented): An apparatus for powering an electrical network comprising:
a programmable controller comprising a microcontroller; and
electrostatic discharge protection diodes internal to said microcontroller and
excluding rectification elements of a DC power supply external to said microcontroller;
wherein said internal electrostatic discharge protection diodes provide a source of
direct current for said microcontroller.

Claim 53. (Previously Presented): The apparatus of claim 52 wherein each of said internal electrostatic discharge protection diodes are paralleled by a MOSFET transistor that forms an alternative conducting path around said internal electrostatic discharge protection diodes.

Claim 54. (Previously Presented): The apparatus of claim 53 wherein said alternative conducting path allows firing of a thyristor during a portion of an AC cycle when said internal electrostatic discharge protection diodes are not conducting.

Claim 55. (Previously presented): The apparatus of claim 52 additionally comprising an internal MOSFET transistor that is in parallel with one of said internal electrostatic discharge protection diodes, wherein while applying a gate voltage to a thyristor said MOSFET ensures that said thyristor is turned on.

Claim 56. (New): The apparatus of claim 1 wherein said plug is a plug portion of a plug-in module.

Claim 57. (New): The apparatus of claim 42 wherein said plug is a plug portion of a plug-in module.